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Progress Report

Los Alamos National Laboratory's Threatened and Endangered Species Habitat Management Plan—Year 2000 Report

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SPECIES IN THE SPOTLIGHT

JEMEZ MOUNTAINS SALAMANDER

Plethodon neomexicanus

Status:
Species of concern, State threatened.

Description:
The Jemez Mountains salamander is elongated, from 50 to 110 mm (2 to 5 in.), is brown with fine brassy striping, and has small fore and hind limbs. Identification is by a hairline furrow that extends from the nostril to the edge of the upper lip.

Habitat:
Mixed Conifer. The Jemez Mountains salamander requires shaded and moist wooded canyon slopes with loose, rocky soils that are at elevations from 2,200 to 2,820 m (7,225 to 9,250 ft.).

Occurrence:
The presence of the Jemez Mountains salamander has been confirmed on Los Alamos County, Bandelier National Monument, and Santa Fe National Forest lands and is believed to be on Los Alamos National Laboratory lands as well.

Los Alamos National Laboratory's Threatened and Endangered Species Habitat Management Plan—Year 2000 Report

Leslie A. Hansen, Kathryn D. Bennett, David C. Keller

ABSTRACT

Calendar year 2000 was the first full year of implementation of Los Alamos National Laboratory's Threatened and Endangered Species Habitat Management Plan (HMP). The HMP supports the mission of the Laboratory by protecting threatened and endangered species occurring or potentially occurring on Laboratory land with a minimum of project or operational delays and costs. During 2000, implementation of the National Environmental Policy Act, Cultural Resources, and Biological Resources (NCB) Laboratory Implementing Requirement allowed project and division personnel to perform initial screenings of activities for impacts on threatened and endangered species using the guidelines of the HMP. The Cerro Grande Fire and associated flood protection activities negatively impacted some Mexican spotted owl habitats at the Laboratory. During 2000, Ecology Group personnel prepared four biological assessments, reviewed 475 projects under the ESH-ID process, and conducted 60 surveys for threatened and endangered species concerns at project sites. Reviews of a large number of Cerro Grande Fire rehabilitation projects explain the increased numbers of ESH-IDs and project site surveys in 2000 relative to past years. NCB reviewers reviewed approximately 80 projects. During 2000, 9.2 acres of Mexican spotted owl core habitat were developed as part of the Pajarito Canyon water retention structure project, and US Fish and Wildlife Service concurred that 30.4 acres of Mexican spotted owl buffer habitat could be developed for Laboratory projects without adverse effects. Future work on the HMP includes assessing impacts of the Cerro Grande Fire on the suitability of Mexican spotted owl habitat at the Laboratory and investigating the ecology of and Cerro Grande Fire effects on Jemez Mountains salamander.

Introduction

Purpose of the Habitat Management Plan

Los Alamos National Laboratory's (LANL) Threatened and Endangered Species Habitat Management Plan (HMP) has been developed as a comprehensive site-wide strategy for protecting threatened and endangered species on LANL property. Goals of the HMP are as follows:

Goal 1
Protect undeveloped portions of LANL that are suitable or potentially suitable habitat for threatened and endangered species, while allowing current operations to continue and future development to occur with a minimum of project or operational delays or additional costs related to protecting species or their habitats.
Goal 2
Facilitate US Department of Energy (DOE) compliance with the Endangered Species Act (ESA) and related federal regulations by protecting and aiding in the recovery of threatened and endangered species.
Goal 3
Promote good environmental stewardship by monitoring and managing threatened and endangered species and their habitats using sound scientific principles.

History of the HMP

In the past, natural resources at LANL were not actively managed. Decisions regarding the locations for new development and upgrades to existing development were based on engineering and programmatic criteria on a project-by-project basis. The perimeter areas and other undeveloped areas were designated simply as unmanaged buffers. In recent years, however, LANL managers have become increasingly aware of the need for proactive management of the natural environments under their jurisdiction. This approach stems not only from an appreciation of the role that diverse natural environments and biota play in enhancing the quality of life for both LANL employees and nearby residents, but also from federal laws and regulations requiring that specific natural resources at LANL be managed to meet certain objectives and criteria.

The two federal acts that have the most direct bearing on the development of the HMP are the National Environmental Policy Act (NEPA) and the ESA. In accordance with NEPA requirements, DOE published a final Environmental Impact Statement (EIS) on LANL's Dual-Axis Radiographic Hydrodynamic Test facility in August 1995 (DOE/AOO-LAAO 1995). The final EIS identified and discussed measures that would mitigate potential adverse effects. Among these measures was the commitment of DOE to develop a habitat management plan for all threatened and endangered species occurring at LANL. The plan would be used to determine long-range mitigation actions to protect the habitat of these species. DOE issued a Record of Decision (ROD) on the project on October 10, 1995, which was published in the Federal Register on October 16, 1995 (60 FR 53588). The ROD committed DOE to completion of the habitat management plan within three years from the date of the ROD, to be updated as necessary.

The HMP was developed and submitted to the US Fish and Wildlife Service (USFWS) in August 1998. USFWS formally concurred on February 12, 1999, that activities taking place within the guidelines of the HMP would not harm

threatened or endangered species at LANL. On that date LANL began implementation of the HMP. No changes have been made to the HMP since its initial implementation, although we expect changes in the near future as a result of the Cerro Grande fire (see section "Special Events in 2000").

How the HMP Works

Each federally listed species occurring or potentially occurring at LANL (currently Mexican spotted owl, southwestern willow flycatcher, and bald eagle) has a Site Plan. The Site Plans identify the locations of suitable habitat for each species, called Areas of Environmental Interest (AEIs). They also contain guidelines for activities that may take place close to or within the AEIs without adversely affecting the species. AEIs consist of core areas, which contain suitable breeding or wintering habitat for a species, and buffer areas, which are designed to protect core areas from unacceptable levels of disturbance (Figure 1).

Trained NEPA, Cultural, and Biological (NCB) reviewers review new or modified activities at LANL for compliance with the HMP guidelines in accordance with the NCB Laboratory Implementing Requirement (LIR). If there is a question about an activity's compliance with the HMP, the project is further reviewed by Ecology Group (ESH-20) biologists. If LANL activities remain within the guidelines of the Site Plans, USFWS has concurred that the activities will not adversely affect threatened or endangered species, and the activities may take place without further ESA review. If activities occur outside the guidelines of the Site Plans, LANL and DOE conduct further reviews and initiate Section 7 consultations with USFWS if needed.

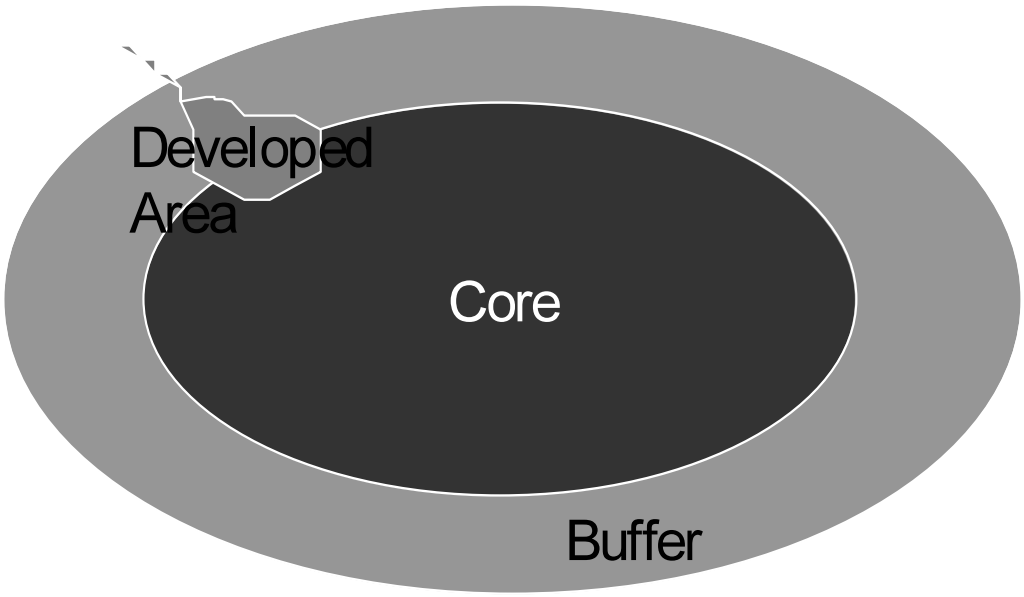

Figure 1. Conceptual diagram of an AEI.

In addition to Site Plans, the HMP contains monitoring plans for federally listed threatened and endangered species (Table 1) and some other species that have

the potential to become federally listed in the future, such as New Mexico state-listed threatened and endangered species (Table 2). These monitoring plans are used by ESH-20 to meet regulatory needs for monitoring threatened and endangered species and to develop information in advance that is needed if a new species becomes federally listed at LANL.

Special Events in 2000

NEPA, Cultural Resources and Biological Resources Laboratory Implementing Requirement:

On January 20, 2000, the NCB LIR was issued. The NCB LIR formalizes LANL's process for meeting the contractual performance requirements in Laboratory Performance Requirement (LPR) 404-00-00.0, Environmental Protection. Before the Environmental Protection LPR, there were no LANL Administrative Requirements addressing threatened and endangered species. The NCB LIR requires that all new and modified programmatic and facility activities (1) consider environmental issues in planning, (2) comply with NCB legal requirements, and (3) incorporate measures necessary to mitigate the effects of activities on environmental resources. The NCB LIR authorized reviewers to be designated at the Division and Program levels, so that initial screening reviews of projects and activities for environmental compliance, including HMP compliance, can be completed outside of ESH-20. All NCB reviewers are required to complete initial and annual refresher training.

Cerro Grande Fire:

In May 2000 the Cerro Grande fire burned about 3,060 ha (7,650 ac) of LANL property and impacted several Mexican spotted owl AEIs. Mitigation activities following the fire, including construction of the Pajarito Canyon flood retention structure, also impacted some Mexican spotted owl AEIs. Because forest destruction and modification changed the suitability of some areas for Mexican spotted owl, we plan to evaluate the quality of current Mexican spotted owl AEIs during 2001. We will redraw the AEI boundaries as appropriate to protect suitable habitat and exclude unsuitable habitat. These proposed changes will be submitted to USFWS for concurrence, probably in 2002.

Table 1. Federally Listed Threatened and Endangered Species Potentially Occurring within or near LANL.

SCIENTIFIC NAME	COMMON NAME	STATUS*	HABITAT	POTENTIAL TO OCCUR⊗
Falco peregrinus tundrius	Arctic peregrine falcon	Recently Delisted	Ponderosa-piñon; cliffs and rock outcrops on cliffs.	Low
Grus americana	Whooping crane	FE (Ex)	Rivers, marshes, and swamps.	Low
Mustela nigripes	Black-footed ferret	FE	Prairie dog towns greater than 32 ha (80 ac).	Low
Falco peregrinus anatum	American peregrine falcon	Recently Delisted	Ponderosa-piñon; cliffs and rock outcrops on cliffs.	High
Haliaeetus leucocephalus	Bald eagle	FT	Permanent rivers, lakes, and large streams; cliffs or large trees.	High
Empidonax trailii extimus	Southwestern willow flycatcher	FE	Riparian areas with stands of willow, buttonbush, or tamarisk.	Moderate
Strix occidentalis lucida	Mexican spotted owl	FT	Forested mountains and canyons. Generally uneven-aged, multistoried forest with closed canopy.	High

*CODES FOR LEGAL STATUS
FE = federally endangered; FT = federally threatened; FE (Ex) = federally endangered, but New Mexico population is an experimental nonessential population.
⊗POTENTIAL TO OCCUR
High = species is known to occur in the area; Moderate = the area has some species habitat components; Low = the area does not have species habitat components

Table 2. New Mexico State Listed Threatened and Endangered Species Potentially Occurring within or near LANL.

SCIENTIFIC NAME	COMMON NAME	NEW MEXICO STATUS*	HABITAT	POTENTIAL TO OCCUR⊗
Cypripedium pubescens	Greater yellow lady's slipper	L1B	Rocky Mountain montane and subalpine conifer forests between 2,250 and 3,600 m (7,500 and 12,000 ft) elevation (NMFRCD 1998).	Low
Lilium philadelphicum andinum	Wood lily	L1B	Rocky Mountain Montane and Subalpine conifer forests between 2,250 and 3,600 m (7,500 and 12,000 ft) elevation (NMFRCD 1998).	Moderate
Opuntia viridiflora	Santa Fe cholla	L1B	Piñon-juniper woodland on western slopes of Sangre de Cristo Range, usually at elevations between 1,650 and 2,250 m (5,500 and 7,500 ft) (NMFRCD 1998).	Low
Spiranthes magnicamporum	Great Plains ladiestresses	L1B	Riparian areas in plains and Great Basin grassland generally at elevations below 2,250 m (7,500 ft) (NMFRCD 1998).	Moderate

Table 2 (cont.)

SCIENTIFIC NAME	COMMON NAME	NEW MEXICO STATUS*	HABITAT	POTENTIAL TO OCCUR⊗
Pisidium lilljeborgi	Lilljeborg's pea-clam	NMT	The species is especially characteristic of lakes, occurring at higher latitudes and altitudes in both North America and in Europe (Taylor et al., 1985). The New Mexico population of the species occurs in cold, alpine Nambe Lake, which is located in a glacial cirque.	Low
Stagnicola caperatus	Wrinkled marsh snail	NME	High-elevation emergent wetlands.	Low
Plethodon neomexicanus	Jemez Mountains salamander	NMT	Shady, wooded, spruce-fir dominated sites at elevations of 2,190 to 2,800 m (7,200 to 9,200 ft) (Williams 1973).	Moderate
Aegolius funereus	Boreal owl	NMT	Relatively inaccessible mature to old growth spruce-fir forests.	Low
Ammodramus bairdii	Baird's Sparrow	NMT	In New Mexico it has been found in a variety of habitats, ranging from desert grasslands in the south to prairies in the northeast and mountain meadows in the San Juan and Sangre de Cristo mountains--to an elevation of 3,540 m (11,800 ft).	Low
Cynanthus latirostris magicus	Broad-billed hummingbird	NMT	Primarily in riparian woodlands at low to moderate elevations (Baltosser et al., 1985).	Low
Falco peregrinus anatum	American peregrine falcon	NME	Cliffs and rock outcrops on cliffs in ponderosa pine forest and piñon-juniper woodland.	High
Lagopus leucurus altipetens	White-tailed ptarmigan	NME	White-tailed ptarmigan inhabit alpine tundra and timberline habitats, which in New Mexico are mainly above 3,150 m (10,500 ft) (Hubbard and Eley 1985).	Low
Vireo vicinior	Gray vireo	NMT	Open piñon-juniper and oak woodlands.	Moderate
Euderma maculatum	Spotted bat	NMT	Spotted bats have been recorded in a wide variety of habitats, from riparian and piñon-juniper woodlands to ponderosa pine and spruce-fir forests (Findley 1987).	High
Martes americana origenes	American marten	NMT	Late successional spruce-fir forests.	Low
Zapus hudsonius luteus	New Mexican meadow jumping mouse	NMT	In both the Jemez Mountains and the Rio Grande Valley, Morrison (1985, 1988) found that preferred habitat for the meadow jumping mouse contained permanent streams, moderate to high soil moisture, and dense and diverse streamside vegetation consisting of grasses, sedges, and forbs	Moderate

*Codes for legal status
L1B = Listed under the NM Endangered Plant Species Act; NME = New Mexico endangered; NMT = New Mexico threatened; FPT = Federal Proposed Threatened
⊗POTENTIAL TO OCCUR
High = species is known to occur in the area; Moderate = the area has some species habitat components; Low = the area does not have species habitat components

LANL HMP 2000 Activities

Threatened and Endangered Species Surveys

During the 1994–1998 field seasons, five areas at LANL were surveyed for the Mexican spotted owl. During 1999, seven AEIs were surveyed for the owl. During 2000, eight AEIs were surveyed for Mexican spotted owl. The surveys from 1994–1999 revealed one nesting pair of Mexican spotted owls on LANL that fledged two young during each of the five years. In 2000, the pair was found within their usual AEI before the fire in early May. Once surveys were reinitiated after the fire, it took several weeks for the adult owls to re-establish occupancy. Follow-up surveys to the usual nest location failed to find any young during 2000.

During the 1995–1999 field seasons, two areas were surveyed for the southwestern willow flycatcher. The areas searched were Pajarito Canyon and the Rio Grande near Buckman Crossing. During 2000 only the Pajarito Canyon AEI was surveyed. The willow flycatcher was found on LANL during the 1999 spring migration but did not nest on LANL property. No southwestern willow flycatchers were found at LANL in 2000.

Project Reviews

ESH-20 reviews proposed projects at LANL under the ESH-ID system. In addition, since 2000, trained NCB LIR reviewers have also been authorized to review proposed projects. Table 3 shows the total number of projects that have been reviewed for threatened and endangered species impacts during 1995–2000, as well as the frequency of other ESA compliance-related activities.

Biological Assessments

Biological assessments are documents prepared to assess the impacts of a project on threatened and endangered species so that DOE can consult with USFWS on those impacts. Consultation is required when, because of the size, complexity, location, or timing of a project, it cannot operate under the guidelines of the HMP. During 2000, the Biology Team of ESH-20 completed four biological assessments. Biological assessments during 2000 included the following:

LA-UR-00-2469. Biological evaluation: the potential effects of the Los Alamos National Pollutant Discharge Elimination System permit renewal on federally listed T&E species.

LA-UR-00-4739. Biological assessment: the potential effects of the Pajarito Gas Line construction on federally listed threatened and endangered species at Los Alamos National Laboratory.

LA-UR-00-5519. Potential effects of the TA-53 cooling tower replacement project on federally listed threatened and endangered species.

Table 3. Project Reviews and other Compliance Activities by Type at LANL during 1995–2000.

Year	Number of ESH-IDs	Number of NCB reviewer reviews	Number of project-specific habitat surveys	Number of project-specific species surveys	Number of Biological Assessments
1995	200	0	9	3	13
1996	245	0	20	11	12
1997	167	0	60	15	5
1998	226	0	133	0	2
1999[a]	243	0	5	0	2
2000[b]	475	80	60	0	4

[a] The HMP was implemented in 1999.
[b] The NCB LIR was approved in 2000.

LA-UR-00-5951. Biological assessment of the potential effects of the Central Health Physics Calibration Facility project on federally listed threatened and endangered species.

NCB LIR

During 2000, initial training was provided to 51 NCB LIR reviewers. This training included a module in screening projects for compliance with the HMP. All NCB LIR reviewers were provided with an ArcExplorer tool that allowed them to view projects in relation to locations of AEIs on LANL.

Total Project-related Changes in Undeveloped Core and Buffer Areas

Table 4 presents changes in acreage of undeveloped habitat in core and buffer areas of AEIs resulting from approved projects during 2000 and cumulatively since implementation of the HMP. This includes both projects allowed under the guidelines of the Site Plans and projects approved after separate consultation with USFWS.

Cerro Grande Fire Impacts

Effects of the Cerro Grande fire were evaluated first by the Burned Area Emergency Rehabilitation (BAER) Team in late May and early June of 2000. Information used in the assessment was based on a review of relevant literature, information contained in the HMP, habitat inventory data, consultation with USFWS, personal communication with LANL biologists, and reconnaissance of the fire area on May 17 through 27, 2000. Ground reviews were conducted on May 25, 26, and 30, and a helicopter flight over the area was conducted on May 25. LANL biologists estimated loss of vegetative resources using 1:50,000 color infrared imagery acquired by the BAER Team on May 20-21. AEI boundaries were overlaid on the infrared imagery using an ARC/INFO geographic information system (GIS), and areas that appeared moderately to severely burned were digitized by hand. A subset of areas was ground-checked during field reconnaissance. Only areas on LANL or DOE property were evaluated for vegetative losses.

In September 2000, the DOE, National Nuclear Security Administration issued the Special Environmental Analysis for the Department of Energy, National Nuclear Security Administration: Actions taken in response to the Cerro Grande Fire at Los Alamos National Laboratory, Los Alamos, New Mexico (SEA) (DOE 2000). The SEA includes descriptions of the emergency actions taken in response to the Cerro Grande fire, the resulting impacts from the actions, mitigation measures taken for these actions that render their impacts not significant or that lessen the adverse effect of the actions, and an analysis of cumulative impacts.

Table 4. Changes in Acreage of Undeveloped Habitat in Core and Buffer Areas.

AEI	Acres developed in 2000		Percent developed in 2000		Acres developed since 1999		Percent developed since 1999	
	Core	Buffer	Core	Buffer	Core	Buffer	Core	Buffer
Pajarito Canyon Mexican spotted owl	9.2[a]	6.4[b]	1.3	0.9	9.2	6.4	1.3	0.9
Sandia-Mortandad Mexican spotted owl	0	1.1[b]	0	0.1	0	1.1	0	0.1
Cañon de Valle Mexican spotted owl	0	24.0[c]	0	1.2	0	24.0	0	1.2
Pueblo Canyon Mexican spotted owl	0	0	0	0	0	0	0	0
Los Alamos Canyon Mexican spotted owl	0	0	0	0	0	0	0	0
Three-Mile Canyon Mexican spotted owl	0	0	0	0	0	0	0	0
White Rock Canyon Bald eagle	0	0	0	0	0	0	0	0
Pajarito Canyon Southwestern willow flycatcher	0	0	0	0	0	0	0	0

[a] Project was the Pajarito Canyon water retention structure, constructed following the Cerro Grande fire.
[b] Project (not yet completed) is the Pajarito gas line.
[c] Project (not yet completed) is a new high-voltage power line.

The SEA documented fire-related changes in Mexican spotted owl AEIs by overlaying a BAER Team map of vegetation mortality, a LANL land cover map, and core area boundaries in an ARC/INFO GIS. The map of vegetation mortality took into account the impacts of the fire on grass, forb, shrub, and tree species. In some places where the fire moved very quickly through a stand in a mosaic pattern, understory vegetation losses may have been classed in the 40% to 70% range whereas overstory losses may have been higher (BAER 2000). This analysis produced a different estimate of effects on Mexican spotted owl habitat than the original BAER report. The SEA analysis produced lower estimates of vegetation mortality within Mexican spotted owl AEI core areas, particularly in the Cañon de Valle and Pajarito Canyon AEIs.

Six Mexican spotted owl AEIs were partially or completely included in the fire areas. Estimated overstory vegetation loss on LANL for each of these AEIs from the BAER report is given in Table 5, and estimated vegetation mortality in LANL and non-DOE controlled property combined from the SEA is given in Table 6.

Table 5. Estimates of Overstory Vegetation Mortality within Mexican Spotted Owl AEIs on LANL only from the BAER Report (BAER 2000).

Mexican spotted owl AEI	Total Area (ac)	0 to 40% Tree Mortality		40% to 70% Tree Mortality		>70% Tree Mortality	
		Acres	%	Acres	%	Acres	%
Cañon de Valle							
Core	1366	1098	80.4	22	1.6	246	18.0
Buffer	1981	1894	95.6	34	1.7	55	2.8
Pajarito Canyon							
Core	701	573	81.7	13	1.8	115	16.5
Buffer	1252	1108	88.5	75	6.0	69	5.5
Three-Mile Canyon							
Core	417	251	60.3	161	38.7	4	1.0
Buffer	842	583	69.2	101	12.0	158	18.8
Los Alamos Canyon							
Core	434	434	100	0	0	0	0
Buffer	483	401	83.1	77	15.9	5	1.0
Sandia-Mortandad							
Core	1166	1023	87.7	99	8.5	45	3.9
Buffer	1388	1256	90.5	18	1.3	114	8.2
Rendija Canyon							
Core	128	29	22.3	7	5.4	93	72.3
Buffer	427	290	67.9	94	22.0	43	10.1

We did not document and do not anticipate any significant impacts to the bald eagle or southwestern willow flycatcher AEIs as a direct result of the Cerro Grande fire. Part of the southwestern willow flycatcher AEI was bulldozed as part of flood mitigation activities following the fire (the installation of a new culvert where Pajarito Canyon crosses State Road 4). However, sprouting willows are rapidly revegetating this area. Runoff of sediment into Pajarito Canyon from the burned area may affect the southwestern willow flycatcher AEI. These wetlands in Pajarito Canyon will continue to be evaluated as part of the Cerro Grande fire recovery effort.

The SEA made the following statements about the impacts of emergency actions on threatened and endangered species (SEA 2000):

> The DOE's post-fire construction of storm water control and retention structures and implementation of soil erosion control measures produced an array of biological effects. These effects ranged from transient to long term; some of these effects may be considered beneficial and some adverse. In the long term, the major beneficial effect is the protection of wildlife habitat from further degradation from flooding and the restoration of vegetation

on burned areas within LANL. Additionally, the activities taken at LANL will potentially reduce the transport of contaminants into wildlife habitats.

Table 6. Estimated Percent Vegetation Mortality in Different Vegetation Classes in Mexican Spotted Owl AEIs including LANL and Non-LANL Property from the SEA (DOE 2000).

AEI (%)	Mixed Conifer (%)	Aspen (%)	Ponderosa Pine (%)	Piñon/ Juniper (%)	Juniper Woodland (%)	Grassland (%)
Cañon de Valle						
0 to 10	26.9	47.5	39.8	83.0	100	4.4
10 to 40	73.1	52.6	60.2	17.0	0	95.6
40 to 70	0	0	0	0	0	0
<70	0	0	0	0	0	0
Pajarito Canyon						
0 to 10	0	0	0	0	0	0
10 to 40	94.0	100	89.8	96.7	100	100
40 to 70	6.0	0	10.2	3.3	0	0
<70	0	0	0	0	0	0
Three-mile Canyon						
0 to 10	0	0	0	3.0	0	0
10 to 40	100	100	100	97.0	100	100
40 to 70	0	0	0	0	0	0
<70	0	0	0	0	0	0
Los Alamos Canyon						
0 to 10	48.5	79.0	60.5	99.8	100	98.4
10 to 40	1.5	0.7	0.6	0	0	0
40 to 70	12.6	2.2	0.7	0	0	0.3
<70	37.4	18.0	38.2	0.2	0	1.3
Sandia-Mortandad						
0 to 10	52.9	0	38.8	51.3	81.4	26.1
10 to 40	47.1	100	61.2	48.7	18.6	73.9
40 to 70	0	0	0	0	0	0
<70	0	0	0	0	0	0

In general, protection of habitat from flood damage will have a beneficial effect on federally listed T&E species and other wildlife. However, destruction of core nesting and roosting potential habitat in Pajarito Canyon due to construction of the flood retention structures will have a minimal long-term adverse effect on the quality of the potential Mexican spotted owl habitat and the associated partially burned AEI. Minor removal of cliff face area (up

to about 75 ft [12.5 m] from the canyon bottom and about 50 ft [15 m] in width) on both sides of Pajarito Canyon also occurred during the construction of the flood retention structure and associated road. This is a permanent adverse effect to that potential habitat area. Trees in a stressed condition that are within the retention structures pooling area may die if repeated flooding events occur over the same growing season. The Pajarito Canyon flood retention structure removed up to about 5 percent of the Mexican Spotted Owl AEI and will result in wildlife habitat fragmentation for game animals. However, this construction is not expected to have an adverse effect on individual Mexican spotted owls or designated critical habitat for the species. New Mexico State-listed T&E species are not likely to have been affected by post-fire activities since they have not been found in the areas where actions had taken place on LANL.

Related Regional T&E Species Events

Listings and Delistings

No species occurring at LANL were listed, delisted, or downlisted during 2000. We had anticipated that bald eagle would be delisted, based on a proposal for delisting published in the Federal Register by the USFWS on July 6, 1999. However, delisting of bald eagle did not occur during 2000. Because of lack of funding, USFWS imposed a moratorium on listing activities not subject to court order or settlement agreements on November 17, 2000.

Critical Habitat Designations

Critical habitat was proposed for Mexican spotted owl in the Federal Register on July 21, 2000. LANL was not part of the area proposed as critical habitat. The exclusion of LANL from critical habitat designation has no effect on LANL's legal obligations to protect Mexican spotted owls under the ESA.

Changes in the ESA and Related Laws

There were no significant changes in the ESA, administration of the ESA, or other laws related to protection of biota at LANL during 2000.

Future HMP Activities

Scheduled Activities for FY01

LANL annually provides institutional funds for threatened and endangered species management. These funds are used for species surveys, project reviews, HMP revisions and publications (including new Site Plans for newly listed species and this report), training, and improving our knowledge about federally listed species so we can make better evaluations about potential impacts to the species from LANL projects. During years in which no new species are listed and no revisions are made to the HMP, these funds are also

used to study the occurrence and distribution of species at LANL that have the potential to become listed in the future. Having this information before a species is listed allows us to respond quickly and with a minimum of disturbance to Laboratory operations if or when the species does acquire federal protection.

We do not anticipate any listings or HMP revisions during 2001. Therefore, we are focusing our activities on (1) improving our knowledge of the next species most likely to be listed, the Jemez Mountains salamander, (2) surveys of other species thought or known to be declining in the region, and (3) improving the training of our staff. Scheduled activities for 2001 include

- annual site-wide surveys for federally listed threatened and endangered species,
- publication of additional copies of the HMP CD (if needed),
- master's thesis study of status of Jemez Mountains salamander after the Cerro Grande fire,
- collaborative study with USFWS on ecology of the Jemez Mountains salamander,
- survey of breeding neotropical migrants,
- survey of zone-tailed hawk (*Buteo albonotatus*),
- executing improved ecological risk models for contaminants and threatened and endangered species,
- reptile and amphibian surveys in White Rock Canyon,
- Section 7 ESA training for project reviewers, and
- publication of a New Mexican meadow jumping mouse habitat model.

Cerro Grande Fire-related Studies

At the end of FY00, LANL received a funding allocation for Cerro Grande fire recovery, including recovery of threatened and endangered species. Projects that will be conducted under that allocation in 2001 include

- master's thesis study quantifying impacts of the fire to Mexican spotted owl habitat distribution and quality at LANL,
- assessment of fire impact on Mexican spotted owl prey species abundance and distribution,
- contaminant levels in Mexican woodrats (*Neotoma mexicana*),
- assessment of vegetation conditions and recovery following rehabilitation, and
- development and implementation of mitigation measures for fire-damaged habitats.

Conclusion

This document is provided to inform you about the activities occurring at LANL related to the protection of threatened and endangered species. If you have

additional questions, please contact Diana Webb, ESH-20 Group Leader, at 667-0730 or Tim Haarmann, Biology Team Leader, at 667-5019.

Acronyms

AEI	Area of Environmental Interest
BAER	Burned Area Emergency Rehabilitation (Team)
DOE	US Department of Energy
EIS	environmental impact statement
ESA	Endangered Species Act
ESH-20	Ecology Group
GIS	geographic information system
HMP	Threatened and Endangered Species Habitat Management Plan
LANL	Los Alamos National Laboratory
LIR	Laboratory Implementation Requirement
LPR	Laboratory Performance Requirement
NCB	NEPA, Biological, and Cultural
NEPA	National Environmental Policy Act
ROD	Record of Decision
SEA	Special Environmental Analysis
USFWS	US Fish and Wildlife Service

References

BAER. 2000. Cerro Grande Fire Burned Area Emergency Rehabilitation Plan. U.S. Interagency Burned Area Emergency Rehabilitation Team, National Park Service, June 9, 2000.

Baltosser, W. H., J. P. Hubbard, and J. W. Eley. 1985. Broad-billed Hummingbird (*Cynanthus latirostris*). New Mexico Department of Game and Fish, Handbook of Species Endangered in New Mexico: BIRD/TR/CX/LA:1-2.

Department of Energy, National Nuclear Security Administration. 2000. Special Environmental Analysis for the Department of Energy, National Nuclear Security Administration, Actions Taken in Response to the Cerro Grande Fire at Los Alamos National Laboratory, Los Alamos, New Mexico. DOE/SEA-03, US Department of Energy, Los Alamos Area Office, Los Alamos, NM.

Department of Energy, Albuquerque Area Operations-Los Alamos Area Office. 1995. Dual Axis Radiographic Hydrodynamic Test Facility, Final Environmental Impact Statement. DOE/EIS-0228, Department of Energy, Albuquerque Operations Office and the Los Alamos Area Office, Albuquerque, NM.

Findley, J. S. 1987. The Natural History of New Mexico Mammals. University of New Mexico Press, Albuquerque, NM.

Hubbard, J. P., and J. W. Eley. 1985. White-tailed Ptarmigan (*Lagopus leucurus*). New Mexico Department of Game and Fish, Handbook of Species Endangered in New Mexico: BIRD/PS/LA/LE:1-2.

Morrison, J. L. 1985. The Distribution of the Meadow Jumping Mouse, *Zapus hudsonius luteus,* in the Jemez Mountains, New Mexico. New Mexico Department of Game and Fish, contract 516.6-74-01, final report:1-39.

Morrison, J. L. 1988. Dstribution, Life History, and Ecology of the Meadow Jumping Mouse, *Zapus hudsonius luteus*, at Four Sites along the Rio Grande Valley in New Mexico. New Mexico Department of Game and Fish, contract 516.6-75-21, final report:1-57.

New Mexico Forestry and Resources Conservation Division. 1998. Plants Database: http://plants.usda.gov/plantproj/plants/index.html.

Taylor, D. W., J. P. Hubbard, and J. W. Eley. 1985. Lilljeborg's Pea-clam (*Pisidium lilljeborgi*). New Mexico Department of Game and Fish, Handbook of Species Endangered in New Mexico: MOLL/SP/PI/LI:1-2.

Williams, S. R. 1973. *Plethodon neomexicanus*. Cat. Amer. Amphib. and Reptiles 131:1-2.

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